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Note on the Diagnosis, by Means of the Microscope, of Paget's Disease of the Nipple and Breast.

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Reprinted from THE CANADIAN PRACTITIONER, October 16, 1890,
by THE J. E. BRYANT CO., Ltd., 58 Bay Street, Toronto.

NOTE ON THE DIAGNOSIS, BY MEANS OF THE MICROSCOPE, OF PAGET'S DISEASE OF THE NIPPLE AND BREAST.

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In Paget's disease the carcinomatous condition of the breast is generally supposed to follow on a long-standing affection of the surface of the nipple, which is comparable in certain respects to chronic eczema, but which, on histological examination, presents characters not observable in the latter trouble. As the usual methods of treatment for eczema are useless here, it is of importance at the outset to determine whether the case in hand is ordinary eczema or the disease in question. The ordinary methods of diagnosis have been hitherto purely clinical: the long duration of the supposedly eczematous condition, the infrequent itching, the feel of the nipple like a coin under a cloth, etc. Recently Darier and Wickham have proposed a new test,*

*Darier—*Comptes Rendus de la Societe de Biologie de Paris* of the 13th April, 1889.

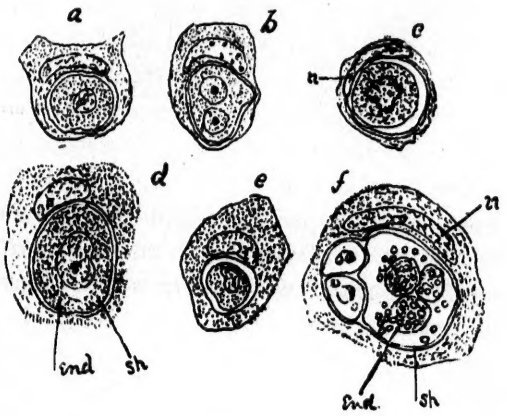
Wickham—*Archives de Medicine Experimentale*, January, 1890; also his monograph, *Maladie de la Peau dite Maladie de Paget*, Masson, Paris, 1890.

See also Prof. R. Ramsay Wright's lecture on Sporozoa, PRACTITIONER, January, 1890.

which, on account of its easy application, may diminish the importance of the other means of diagnosis. It depends on the occurrence inside the epithelial cells in the affected part of peculiar elements, which are considered by these observers as parasitic sporozoa (or psorospermiæ) and the condition of the nipple is, accordingly, from their point of view, a case of psorospermosis. The bodies are usually found in, but not confined to, the lower layers of the epidermis, in the "eczematous" part, and they may be observed in the cells filling up the galactophorous ducts. They are usually large, and they may, according to Darier, measure in diameter from one-third to even one-half the thickness of the stratum mucosum of the epidermis where they are placed. If now, one of the small crusts or scabs from the diseased nipple, examined with appropriate methods of preparation under the microscope, should be found to contain the bodies in question in greater or less abundance, the diagnosis of Paget's disease is, these authors claim, established.

I have had two cases of Paget's disease of the breast for examination, and from one case—that of Dr. Burt's, of Paris, Ont.—I made a large number of sections, which furnished all the material necessary for a full study of these bodies. In the second case, which was under the care of Dr. Primrose, in the Toronto General Hospital, I had the privilege of examining

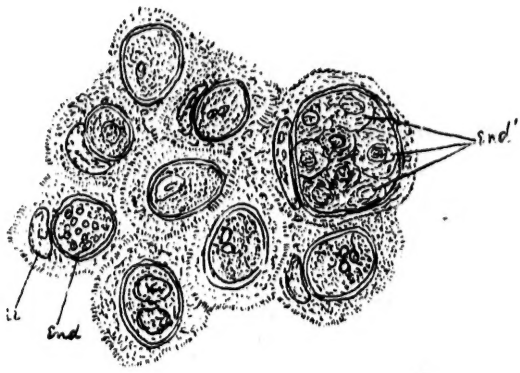
after Darier's method, slightly modified, the disease of the unremoved breast, and found there, as in the first case, the bodies in question. Figures 1 and 2 are drawn from preparations so made from Dr. Primrose's case.



(Fig. 1.)

EXPLANATION OF FIGURES.

Fig. 1.—*a*, *b*, *c*, *d*, *e*, examples of isolated epithelial cells with endocytes; *n*, the pushed-aside nucleus of the epithelial cell; in *b*, the endocyte has two nuclei; *end*, the endocyte, *sh*, its refracting membrane; in *f*, the endocyte has undergone a process of degeneration and disintegration. × 500.



(Fig. 2.)

Fig. 2.—A group of epidermal cells with endocytes, *end*, *n*, the nucleus. In one cell there are several endocytes (*end'*) present within the same membrane. × 500.

As these structures and analogous intracellular forms in epitheliomata are likely to be the subject of a great deal of interest in the near future; and moreover, as the views of Darier and Wickham, as to their nature, may not be endorsed by all pathologists, it is convenient to have a name for them which will express no preference for any particular theory. I have, therefore, selected the term *endocyte*,* which is both readily applicable and intelligible, and it will, I hope, serve the purpose until the question

**Endon* within, and *kutos* a vesicle or cell.

of the nature of these bodies is satisfactorily solved.

Darier's method was either to mount the crusts on the slide in water under a cover glass, and study them with a moderately high-power objective, or, better, to tease out a crust on the slide in Gram's iodine solution, and examine as before. When more or less fat is present, it is removed by placing the crust for several hours in a 10% solution of ammonia. The method which I adopted was somewhat different, and had the advantage, also, of making a permanent preparation. The crust, or a portion scraped from the nipple, was teased out in a drop of tincture of iodine on the slide, the cover glass put on, and after a couple of minutes a drop of 50% glycerine run in. The alcohol and the iodine fix the endocytes, and the iodine gives them a brown, yellow tint, which fades slowly in glycerine. In the preparation from Dr. Primrose's patient, there were not a large number of free cells, with endocytes enclosed, although forms like those of Fig. 1 were met with; but the most unmistakable evidence of the occurrence of the endocytes was furnished by some of the unteased portions themselves (Fig. 2). Here they were readily seen with their clear, hyaline membrane, in a great majority of the cells, whose nuclei frequently appeared pushed to one side and crescentic in outline.

In an examination of the sections made from the excised breast of the same case, there were found a large number of endocytes in the epithelial cells, covering the retracted nipple, as well as in those filling the ducts.

As already stated, endocytes are present in epitheliomata, but less abundantly; and they have rarely the cystic membrane, and the large size found in those of Paget's disease, and they occur, moreover in the central cell of the "nest," which fact readily distinguishes them from those now under consideration.

I leave the question of the nature of the endocytes for discussion in a future paper.* Although not endorsing fully the views of Darier and Wickham with regard to them, I have no doubt whatever of their great value in the diagnosis of Paget's disease, whether of the nipple or of any part of the skin.

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*To appear as one of the memoirs of the Pathological Society of Toronto.